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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,587	11/30/2000	Hans Peter Rath	49091	5855

26474 7590 12/14/2006

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EXAMINER

LU, C CAIXIA

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,587

Applicant(s)

RATH, HANS PETER

Examiner

Caixia Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12,14-17 and 21-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12,14-17 and 21-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 12, 14-17 and 21-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rath (US 5,408,018) for the same rationale as set forth in the previous Office action mailed August 11, 2006.

Response to Arguments

2. Applicant's arguments filed November 13, 2006 have been fully considered but they are not persuasive.

Applicants have correctly point out that Rath's Examples 6-8 do not anticipate the instant claims. This is actually the very reason that the instant claims are rejected under 35 USC 103 rather than under 35 USC 102.

Applicants further argue that Rath's teaching does not meet criteria (2), "there must be a reasonable expectation of success", and (3), "the prior art reference must teach or suggest all of the claim limitations to establish a prima facie case of obviousness". The examiner disagrees. First of all, the polyisobutenes of Rath's Examples 6-8 all meet the limitations of the polyisobutene of the instant claims—having a terminal vinylidene group content of more than 80 mol% and number average molecular weight of 500-5000. Furthermore, Rath also expressly teach that "dialkyl ether coligands are C₂-C₂₀ dialkyl ethers", "[t]he mixed boron trifluoride/secondary alcohol/dialkyl ether complex catalysts can contain the secondary alcohol and dialkyl ether ligands in virtually any ratio of amounts", and "the optimal secondary alcohol/dialkyl ether ratio also depends on the nature of secondary alcohols and the

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dialkyl ethers used in each case" (col. 7, lines 61-62; and col. 8, lines 21-24 and 27-29). Apparently, Rath does not particularly limit the type of dialkyl ether when the mixture of a secondary alcohol and dialkyl ether is used in the catalyst system, i.e., Rath's dialkyl ethers include those ethers of the instant claims, and Rath's ratios of (secondary alcohol)/(dialkyl ether) and (secondary alcohol+dialkyl ether)/boron trifluoride include those ratios of the instant claims. When both secondary alcohol and dialkylether such as bis(secondary alkyl)ether are used in preparation of the catalyst, the optimized ratio would be expected to be in the range of the instant claims since the purposes of both Rath's process and the process of the instant claims are same--for the preparation of the same type of polyisobutene in the presence of catalysts having the same components.

In view the forgoing, Rath does teach all of the limitations of the catalyst of the instant claims and provide reasonable expectation of success for those catalyst compositions. In order to overcome the rejections of the record, applicants need to provide criticality and unexpected results to show only when the catalyst components with ratios within the claimed ranges, the catalyst composition is able to provide polyisobutene with a terminal vinylidene group content of more than 80 mol% and number average molecular weight of 500-5000.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.
Primary Examiner